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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,062	12/05/2003	Hul Chun Hsu	2419.4-P-14919	9146

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07/01/2004

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EXAMINER

DUONG, THO V

ART UNIT PAPER NUMBER

3743

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,062

Applicant(s)

HSU, HUL CHUN

Examiner

Tho v Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed subject matter of "the support body is a right spiral" or "the support body is a left spiral" must be shown or the feature(s) canceled from the claim(s). The applicant does not describe what direction is the spiral shown in figure 1. No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed limitation that the support body is a right or left spiral, renders the scope of the claimed indefinite since it is not clear whether the right direction or the left direction is a spiral in clockwise direction and counter clockwise direction. A right or left direction is not an appropriate term to describe the direction of the spiral since the spiral can be both left or right direction dependent on where the spiral starts.

Furthermore, claims 2-3 are further rejected as can be best understood by the examiner in which the right spiral direction is counter clockwise direction and the left spiral direction is clockwise direction.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Low et al. (US 3,789,920). Low discloses (figures 1-3) a heat pipe comprising a hollow pipe body (11); a wick structure of screen mesh (14) assembled on an internal wall of the pipe body; a spiral continuous board support structure (16) inserted into the pipe body to support the wick structure (14) on the inner wall of the pipe body by a surface of the spiral board; and the support body (16) has a plurality of groove holes (19) formed therein. As regarding claims 2 and 3, the support body

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(16) is a counter clockwise spiral if the support body is viewed from right to left and the support body (16) is a clockwise spiral if the support body is viewed from left to right.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arcella (US 3,857,441) in view of Low et al. (US 3,789,920). Arcella discloses (figures 1-2) a heat pipe comprising a hollow pipe body (20); a wick structure of screen mesh (14) assembled on an internal wall of the pipe body; and at least one support structure (34) are inserted into the pipe to support the wick structure of screen mesh on the internal wall of the pipe body by a surface of the support structure; the support structure has a plurality of groove holes (32) formed therein. Arcella does not disclose that the support structure is formed by a continuous right or left spiral board. Low discloses (figures 1-3 and column 1, lines 55-60) a heat pipe that has a support structure (16) is formed of a continuous spiral board inserted into a pipe body (11) for the purpose of having a support structure that applies a radially directed, uniform pressure to the internal surfaces of a wick (14) on to the pipe body. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Low's teaching in Arcella's heat pipe for the purpose of having a support structure that applied a radially directed, uniform pressure to the internal surface of a wick onto the pipe body of the heat pipe. As regarding claims 2 and 3, the support body (16) is a counter clockwise spiral if the support body is viewed

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from right to left and the support body (16) is a clockwise spiral if the support body is viewed from left to right.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Han et al. (US 6,427,765) discloses a heat pipe having support structure disposed inside the heat pipe.

Adkins et al. (US 5,275,232) discloses a dual manifold heat pipe that has a support structure spirally formed in the heat pipe.

Lamp (US 4,043,387) discloses a water heat pipe with improved compatibility.

Masakatsu (JP 409170888A) discloses a heat pipe with a spiral structure disposed within the heat pipe.

Masaru et al. (JP 200074579A) discloses a heat pipe having a support structure with holes formed thereon.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

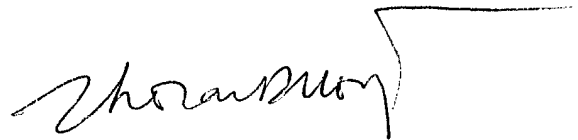
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Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



TD

June 22, 2004



Tho Duong

Patent Examiner